GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

OFFICE: TRIBUNE BUILDING, NEW YORK.

Conducted by . . . . . Professor C. S. SARGENT.

ENTERED AS SECOND-CLASS MATTER AT THE POST OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, OCTOBER 30, 1889.

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The Nation's Forests.

EARLY in the present year we suggested a plan for the protection and care of the forests situated upon the public domain of the United States, and the property, therefore, of the people. Our suggestions were widely discussed at the time by the press of the country, and received hearty support and endorsement. They were briefly these:

First. That the government should at once withdraw, temporarily, from public sale and entry all its lands upon which forests are growing.

Second. That officers and men should be detailed from the army to protect these forests from fire and theft, as far as it is now practicable to do so, until a permanent forest-organization can be established by the government of the United States.

Third. That the President of the United States should be authorized to appoint a Commission of enlightened men to study the general forest-problem in all its relations, and to present to Congress a scheme of national forest-control and administration.

The American Forestry Association, a body of men and women familiar with the requirements of forest-administration, at its recent meeting in Philadelphia, adopted a resolution, introduced by Mr. B. E. Fernow, embodying the essential features of our plan, and appointed a committee to urge upon the government the necessity of considering this matter. This action of the Forestry Association is important. It brings the whole subject directly to the attention of the President and of Congress in a way which cannot be overlooked. The fact that a simple and economical plan, approved with hardly an exception by the press of the country, has the unanimous support of those persons who possess special knowledge of our forests, and look at them unselfishly and from a national point of view, marks a decided step forward. It is settled, at least, that there is to be concerted action. But it is only a step. Resolutions will not save forests; nor the wisest utterances of the press excite Congress to action. A beginning has been made, and a very good one, but it is only a beginning, and the really hard work is yet to be done. There are still serious difficulties to overcome before even the most primitive measures of forest-conservancy can be adopted in this country.

The great mass of the people of the United States are ignorant of the history, the requirements and the uses of forests; and are slow, therefore, to respond to appeals made to them for sustained efforts to overcome the indifference of Congress. The number of men and women who know that the prosperity of the country is bound up in its forests, and who are willing to devote their time, labor and money to the promulgation of this fact, is comparatively not large. They live, for the most part, remote from the forests they would see the government preserve. Their interest in these forests is not a personal interest. These far western forests might perish and there would be no perceptible change in the prosperity or in the surroundings of nine-tenths of the people who are now most interested in their preservation. This interest may be a sentimental one, but it is none the less real. It is of that character from which political and economical reforms have sprung, and it is a hopeful and encouraging sign of our national progress that there are men and women in this community who are willing to lend themselves unselfishly to a cause which promises no immediate or personal returns. Opposed to them are men of a very different stamp. These live by despoiling what the others would preserve. They are on the ground; they live upon the forests. Any action of Congress which would check or control their operations in the forests of the public domain would affect at once their personal interests and prosperity. Among these men are some who buy legitimately timber lands from the government and turn the timber into money; others live by pillaging the timber, either openly or under cover of inadequate and badly administered laws. Others, like the shepherds and hunters of California, destroy the national forests for the accomplishment of their own selfish purposes. These various interests are well organized; and the men who live on this accumulated wealth of the nation can afford to pay handsomely to preserve government indifference. They will oppose before Congress, in every way in their power, every effort which can be made to change the laws under which the public lands are administered and disposed of. The opponents of a system of forest-conservancy in the United States have already shown what they can accomplish. There was a bill before the last Congress to make certain changes in the laws under which national timberlands could be disposed of. It proposed to sell the stumpage with certain proper conditions, but not to sell the land. The bill never had the slightest chance. It was killed finally by a member of Congress from Alabama, on the ground that it would work injustice and injury to the people of his state. The truth was that the people of Alabama and of the neighboring states of Mississippi and Florida had been plundering, in one form or another, the public domain for years, and that any change of the law would affect seriously the interests of influential citizens.

It is a difficult matter to oppose successfully all the different interests which have come into existence because the government of the United States has allowed its forests to perish rather than to make a serious effort to protect them; but now that a plan of action has been adopted by the Forestry Congress to which no unselfish opposition can be made, there is at last something definite to work for. The next step to be taken is to increase the popular knowledge of the forest and of its importance, that Congress, influenced by popular demand, may be induced to consider seriously a national system of forest-management; and then the matter being once fairly before Congress, a fight must be made between the people on the one side and a well organized and well equipped body of interested men on the other. There is no doubt which side will win in the long run, and there would be no grave apprehension of ultimate success if forests, especially in dry regions like western America, once destroyed could be restored. But in the case of these western forests delay is fatal, and the fact that they may be exterminated before

we are prepared to preserve them is the serious danger the advocates of forest-preservation have to encounter. More real progress, however, has been made during the past year than has been made before, and this fact is at least hopeful. It now remains for the members of the Forestry Association to put forth their best efforts and use all their influence to carry out the work they have begun so successfully.

Holiday Notes in Southern France and Northern Italy.—III.

AFTER Turin, nothing of importance or of much interest was noted until Vercelli was passed, where a long hedge or two of *Hibiscus Syriacus* furnished lines of bright color as the train passed along. In England this beautiful shrub flowers too late in the season; and generally before the blossoms have had time to open fully, they are destroyed by the cold and wet of late autumn. On the left, after crossing the Sesia, the Alps come into view, the magnificent Monte Rosa group being the most conspicuous. In the neighborhood of Magenta, large tracts of low lands—under water for two months in the year—are devoted to the cultivation of Rice, the cutting of which had commenced the first week of September. The drier spots—after the Rice district was passed—were planted with endless rows of pollarded White Mulberries; the importance of the silk industry to this part of Italy being indicated by the vast extent of land covered by these plants. Between the rows Indian Corn, and occasional Vines, were grown. In the region about Brescia, beautifully situated at the foot of the Alps, Vines were trained to climb tall trees, the long canes being festooned from one stem to another, usually at a sufficient height above the ground to allow of plowing underneath them. Various trees were used as Vine-supports; among them we noticed the Walnut, Maple, White Mulberry and Manna Ash (*Fraxinus Ornus*). Contrary to our expectations, we saw but few so-called Lombardy Poplars in the plains of Lombardy. The White Willow (*Salix alba*) and the Black Italian Poplar (*Populus nigra*) were, however, very common. In a few barren looking places—and these were by no means frequent in the fertile, well cultivated plains—a little color was afforded by a pretty pink flowered *Epilobium rosmarinifolium* (a really pretty plant for the herbaceous border), and one of the Evening Primroses (*Œnothera biennis*). Giant plants of Hemp occurred as weeds here and there in the fields of Maize, amongst which, too, pumpkins of huge dimensions were conspicuous by reason of their bright color.

At Desegnano, at the south-west angle of the Lago di Garda, the largest of the north Italian lakes, an admirable survey of that beautiful stretch of water was obtained. A few miles further, near San Martino delle Battaglie, on the right, is the monument commemorating the battle of Solferino. Fine groups of Cypresses (*Cupressus sempervirens*), the form with a compact, flame-shaped habit, surrounded the monument and constituted a striking feature in the landscape; the battle field itself is some five miles away. Verona, next to Venice the principal town in Venetia, is situated at the base of the Alps; Cypresses of large size, standing out clear against the sky on the hill-sides, are the most striking objects in the landscape. At Padua, close to the station, *Photinia Lindleyana* has attained tree-like dimensions, and must be a fine sight when in flower. To the left the Tyrolese Alps are visible in the distance, and the traveler is fully occupied with far-away views until Venice, coming into sight, claims all his attention, with its dark blue line of towers and churches rising from the sea.

After consulting guide books as to the location of the Botanic Garden and engaging a gondola, we passed through the Grand Canal, by churches and palaces far too numerous to remember, and through narrow, dirty water-ways, and landed close to the church of San Giobbe, adjoining which (Bædeker had informed us) "is the entrance to the former Botanical Garden, famed for its gigantic Cacti, and now a nursery garden." Instead of a nursery, however, we found a machine factory at work, and although through the half opened door we could see some of the old trees still standing, the doorkeeper refused to allow us to enter the premises without permission from the Direction. He informed us, however, that the Botanical Garden had been removed to a spot near the Abbazia della Misericordia, and so we again journeyed on—through the Ghetto, by no means so squalid and unlovely a quarter as the lower parts of many cities we have seen—by lonely, deserted canals until we reached our destination. A ring at a door in a blank wall by one of the officious idlers who seem to swarm everywhere in Venice, and we were admitted into what at first we refused to believe was the Botanic Garden. A small square piece of land with a few fruit trees, a few annual and perennial flowering plants, a few vines, gourds, etc., evidences of neglect at every corner; this was the spot we had spent so much time and trouble to visit! The only interesting objects were a huge bush of *Jasminum grandiflorum* in flower, planted out in an open-sided conservatory, and a finely flowered example of *Ipomœa pandurata*, here grown under the name of *I. bulbosa*. The Jasmine is largely grown in Belgium as a winter flowering pot-plant for the English and French markets.

We saw singularly little vegetation on the walls skirting the numerous canals through which we passed; the Pellitory (*Parietaria officinalis*), common throughout Europe, and the Samphire (*Crithmum maritimum*), the fleshy leaves of which are made into the well-known pickled condiment, were the most common. Here and there *Campanula pyramidalis* was conspicuous, with its somewhat strict panicles of handsome blue flowers. None of the white flowered form was seen.

The Giardino Reale, prettily situated on the edge of the lagoon beyond the south end of the Grand Canal, can boast of some fine trees. Among the best are large-leaved Privets (*Ligustrum lucidum*), *Paulownia imperialis*, *Lagerstræmia Indica*—in flower at the time of our visit—*Magnolia grandiflora*, Deodar (*Cedrus Deodara*), *Kœlreuteria paniculata*, with its large, spreading, upright panicles of red, bladdery fruits, and the Judas tree (*Cercis Siliquastrum*). The turf was thin and poor and the grass long and neglected, giving the whole place an untidy aspect.

The Giardini Pubblici are situated at the extreme south-east of Venice, and are most expeditiously reached by small steam launches, which run at frequent intervals from the grand canal. They were laid out under Napoleon I. in 1807, on space obtained by the demolition of several monasteries. Here many trees and plants of interest were noted. From Garibaldi's statue—on the base of which the Maidenhair (*Adiantum Capillus-veneris*) was growing, apparently self-sown—runs an avenue of Locusts of a curious form. The terminal leaflets on these trees were much developed at the expense of the lateral ones, which were most frequently altogether suppressed. This tree, smaller than the type, is common in European nurseries under the name of *Robinia monophylla*. In the shrubberies on each side of this avenue are huge bushes or small trees of *Ligustrum lucidum*—one of the most valuable evergreens in southern Europe—*Photinia serrulata* and *Euonymus Japonicus*—green-leaved, golden and silver variegated forms, all fruiting freely. The Paper Mulberry (*Broussonetia papyrifera*) here attains a large size. In open spots were splendid bushes of Oleander (*Nerium Oleander*) in full flower, masses of the brilliant scarlet *Salvia splendens*, the gorgeously colored *Amaranthus tricolor*, about nine feet in height, *Canna Ehemanni* in fine flower, and a glorious mass of *Ipomœa Quamoclit*. Roses, with a crop of funnel-like pieces of zinc (fastened round the shoots) filled with soil and covered with moss to retain the moisture, had a strange appearance. This clumsy method of propagation we saw practiced in many places during our wanderings. Results must have been equally good and the labor involved in watering not nearly so great had the bushes been layered in the ground (the layering done in plunged pots if desired), after the common English plan. *Sophora Japonica*, a tree perfectly hardy and free flowering in England, was conspicuous by reason of its long, constricted, bead-like pods; in Great Britain our summers are neither hot enough nor long enough to allow of its fruiting. *Buddleia Lindleyana*, a graceful and pretty shrub, is here quite at home; in England it is killed in most places every few years unless grown against a wall in a sheltered spot. A group of Pines, with *Wistaria Sinensis* climbing among the branches high above the ground, looked picturesque, the light green of the climber contrasting markedly with the dark green of the Pine needles. *Pittosporum tobira*, a Chinese plant with very fragrant white flowers, grows as freely here as does the Cherry Laurel in England, and the commonly cultivated green-house plant, *Habrothamnus elegans*, produces its red-purple panicles in great profusion as a shrubbery plant in the sunny south. A few very fine *Libocedrus decurrens*, *Melia Azedarach*, *Albizzia Julibrissin*, *Eriobotrya Japonica*, groups of *Celtis australis*—the Micoucoulier of the Provençal poets—a massive belt of *Ruscus hypophyllum*, larger than we ever saw it in England, nearly complete the list of trees and shrubs which we saw in this place. The general condition of the park was hardly satisfactory; each shrub or tree was allowed to struggle for light and air unheeded, and strong growing trees, such as Poplars—altogether out of place in restricted areas—were killing really good plants. No thinning or pruning seemed to be

practiced, and, in some cases, a regular jungle of miserable specimens was the result.

In the Venice market, one much cleaner, more spacious and better arranged than those of some larger cities, fungi, of species and genera eaten elsewhere by only a few enthusiastic fungophagists, were offered in quantity, each seller exhibiting a stamped official certificate of the day's date to the effect that his fungi were wholesome and that he was authorized to sell them. Many Cucurbits, never grown in Great Britain as articles of food, were here, such as Hercules' Club (*Lagenaria gigantea*), the Bottle Gourd (*Lagenaria vulgaris*), *Momordica Charantia*, spiny and green outside, bright red within; and perhaps Pumpkins should also be included in this category. Of this last named vegetable quite a bewildering variety in color, form and size were offered for sale. Baked pumpkin formed the whole stock in trade of many peripatetic merchants, and so did boiled sweet potatoes. Figs of excellent quality were abundant at a penny per pound, good apples brought the same price, and peaches, in enormous quantities, were offered at threepence per pound. Pungent green (unripe) capsicums and yellow sweet ones were marked a penny a pound, and shelled haricot beans, in variety, at low prices. Aubergines, pomegranates, with branchlets attached, the fruits of the Service tree (*Pyrus Sorbus*) and watermelons complete the list of fruits. Excellent vegetables were plentiful, endives showing remarkably good cultivation. Celery was, however, quite green. Apparently not the slightest attempt is made to blanch it.

Kew. *George Nicholson.*

The Art of Gardening—An Historical Sketch.

XII.—Roman Country-Seats.

WHEN we pass from the Imperial City and its suburbs to the country-seats of its wealthy citizens, we find something radically novel and national. All communities had possessed sacred groves and small gardens of utility and ornament. The Phœnicians had dwelt in suburban villas. The Persians had created wide semi-natural parks, and the Greeks had owned urban pleasure-grounds, most splendidly developed, in such late colonies as Alexandria. But in the latter days of Rome, private citizens seem first to have established themselves in numbers in distant country-seats, marked by an almost impossible luxury in the way of architectural and of natural or semi-natural beauty. Here, once more, we read in the history of gardening a reflex of the social conditions of the place and time. Rome's unprecedented power, gained while the Republic still existed, had brought enormous piles of gold into private coffers, and wealth, authority and travel had united to develop intelligence and taste. Then, when political changes put imperial masters over those who had ruled themselves, they were more and more strongly impelled to flee from the court where their minds and tongues were fettered; where their conscience was perpetually outraged, and where their bodies were often in danger, too. It was frequently the part of wisdom to seek retirement in the country; and we can easily see how its attractions must have perpetually appealed to highly cultivated men, not yet weaned from ideas of freedom, and able to surround themselves, in the heart of Tuscany or by the shores of Como, with all the comfort and splendor of Rome itself.

Fortunately, detailed descriptions of some of these great Roman country-seats have come down to us from the pens of their enthusiastic owners. In a letter to Gallus, Pliny, the younger, speaks of his villa at Laurentinum, on the sea-coast, seventeen miles from Rome, portraying its position close to the water; its little garden with Box-hedges, patched with Rosemary where the salt air had killed the Box; its tennis-court; its long *pergola*, with a sanded path, so smooth that one might walk upon it barefoot; its isolated banqueting-room above the shore, and its Fig and Mulberry trees.

But he paints a much more splendid picture when, writing to Apollinaris, he describes his larger estate in Tuscany. It lay at a "great distance from the sea, under one of the Apennine mountains." The climate was so cold in winter that Myrtles and Olives would not flourish; but the summers were "exceedingly temperate." The view is dwelt upon at length, with its distant mountains in forest, and its nearer fertile little hills, its plains covered with vineyards, "terminated by a border, as it were, of shrubs," its "never-failing rills," and the infant Tiber traversing the plain. The house need not be described. Its principal front looked full south, and was adorned with a spacious portico. "In the front of the portico is a sort of terrace, embellished with various figures, and bounded with a Box-hedge, from whence you descend by an easy slope, adorned with the representation of divers animals in Box, answering alternately to each other, into a lawn overshadowed with the soft, I had almost said, liquid Acanthus. This is surrounded by a walk enclosed with tonsile evergreens, shaped into a variety of forms. Beyond it is the *Gestatio*, laid out in the form of a circus, ornamented in the middle with Box cut in numberless different figures, together with a plantation of shrubs, prevented by the shears from running up too high. The whole is fenced in with a wall covered by Box, rising by step-like ranges to the top. On the outside of the wall lies a meadow, which owes as many beauties to Nature as all I have described within does to art, at the end of which are several other meadows and fields interspersed with thickets." The dining-room was at one extremity of the terrace, commanding a beautiful outlook. Near it stood a small isolated structure shaded by four Plane trees, in the middle of which rose a fountain with a marble basin, the overflowing waters from which kept the Planes and the lawn fresh and green. This building contained a private dining-room and bed-chamber, and was faced by another portico, another little room, lavishly adorned, and another fountain. After describing other portions of the house—private rooms, hot and cold and tepid baths and enclosed porticoes, one "resembling a grotto"—Pliny says: "In front of these agreeable buildings lies a very spacious hippodrome,* entirely open in the middle, by which means the eye, upon your first entrance, takes in its whole extent at one view. It is encompassed on every side with Plane trees covered with Ivy, so that while their heads flourish with their own green, their bodies enjoy a borrowed verdure; and thus the Ivy twining round the trunk and branches, spreads from tree to tree and connects them together. Between each Plane tree are planted Box trees, and behind these Bay trees, which blend their shade with that of the Planes. This plantation, forming a straight boundary on both sides of the hippodrome, bends at the farther end into a semi-circle, which, being set round and sheltered with Cypress trees, varies the prospect and casts a deep and gloomy shade, while the inward circular walks (for there are several), enjoying an open exposure, are perfumed with Roses, and correct, by a very pleasant contrast, the coolness of the shade with the warmth of the sun. Having passed through these several winding alleys you enter a straight walk, which breaks out into a variety of others, divided off by Box-hedges. In one place you have a little meadow; in another, the Box is cut into a thousand different forms—sometimes into letters, expressing the name of the master, sometimes that of the artificer, while here and there little obelisks rise intermixed alternately with fruit trees; when on a sudden, in the midst of this elegant regularity, you are surprised with an imitation of the negligent beauties of rural nature, in the centre of which lies a spot surrounded with a knot of dwarf Plane trees. Beyond these is a walk interspersed with the smooth and twining Acanthus, where the trees are also cut into a variety of names and shapes. At the upper end is an alcove of white marble shaded with vines, supported by four small Carystan pillars. From this bench the water, gushing through several little pipes as if it were pressed out by the weight of the persons who repose themselves upon it, falls into a stone cistern underneath, from whence it is received into a fine polished marble basin, so artfully contrived, that it is always full without overflowing. When I sup here this basin serves as a table, the larger sort of dishes being placed round the margin while the smaller ones swim about in the form of little vessels and water-fowl. Corresponding to this is a fountain which is incessantly emptying and filling; for the water, which it throws up a great height, falling back again into it, is, by means of two openings, returned as fast as it is received. Fronting the alcove (and which reflects as great an ornament to it as it borrows from it) stands a summer house of exquisite marble, whose doors project and open into a green enclosure, as from its upper and lower windows the eye is presented with a variety of different verdures. Next to this is a little private closet (which, though it seems distinct, may be laid into the same room), furnished with a couch, and, notwithstanding it has windows on every side, yet it enjoys a very agreeable gloominess by means of a spreading vine which climbs to the top and entirely overshades it. Here you may lie and fancy yourself in a wood, with this difference only, that you are not exposed to the weather. In this place, also, a fountain rises and disappears; in different quarters are disposed several marble seats, which serve no less than the summer-house as so many reliefs after one is wearied with walking. Near each seat is a little fountain, and throughout the whole hippodrome several small rills run wheresoever the

* *Circus* and *hippodrome* have not in these descriptions their primitive Greek meaning, but denote ornamental spaces, surrounded by walks or drives.

hand of art thought proper to conduct them, watering here and there different spots of verdure, and in their progress refreshing the whole." Does the reader wonder, although only the grounds, and not the splendid house itself, have been portrayed, that Pliny had a "very great passion for this villa," which, he says, "was chiefly built or finished" by himself? Or does he marvel that when the great Renaissance of art in Italy occurred centuries later, Pliny's description found a score of commentators and illustrators on paper, or that numerous attempts were made to reproduce the beauties it portrayed?

New York. *M. G. Van Rensselaer.*

New or Little Known Plants.

The Japanese Flowering Apple.

THERE appeared on page 260 of the present volume, among the notes of our correspondent at the Arnold Arboretum, an account of the different varieties of ornamental Apple-trees cultivated in that establishment.

No description, however, can give even a faint idea of the wonderful beauty of these plants at their flowering-time, and even the most successful picture fails to show the delicate coloring of the masses of bud and bloom which smother the branches in early spring. One of the most beautiful of these small Apple-trees is that Japanese variety of *Pyrus baccata*, brought by Von Siebold to Europe, and known generally in nurseries as *Pyrus Malus floribunda*. Our illustration, made from a photograph of a tree of this variety which grows in a garden near Boston, shows the habit this plant assumes when it is nearly fully grown, with its long, spreading or upright, wand-like branches and its countless clusters of flowers. The trees are even more beautiful before the flowers are all expanded, as they were when our picture was made, and when the bright red flower-buds mingle and contrast with the pure white petals. There is no tree more beautiful in bloom than this Apple, and none better suited for planting on the margin of a large shrubbery or as a single specimen on the lawn or in a small garden. There is no question of its hardiness; it grows, in good soil, with great rapidity, and it flowers year after year with always increasing profusion.

Entomological.

A Destructive Cornel Saw-fly.

(*Harpiphorus varianus*, Norton.)

DURING the past two or three years great injury has been done to the foliage of several species of Cornus by white saw-fly larvæ, which, until the past summer, have remained undetermined. These insects have been especially destructive at the Arnold Arboretum and in its immediate vicinity; but, at other places for twenty miles or more from Boston, their work has been apparent. Indeed, the abundance and destructiveness of these larvæ have caused some people to hesitate about planting specimens of Dogwood for ornament, since, by the end of July or early in August, the plants are apt to be either entirely defoliated or to have their foliage so badly eaten as to become very unsightly. Specimens of the larvæ had been sent to various entomologists for determination, but without result; and other specimens kept in confinement had passed the last moult, but died during the winter or spring without pupating. Early this spring, however, upon breaking a piece of partly decayed wood picked up in the vicinity of Cornus bushes, I found a number of these larvæ within it. Many of them had made tunnels from one to several inches in length, the longest borings being in the most decayed portion of the wood. When taken out and exposed to warmth and light the larvæ moved in a sluggish manner.

Several pieces of wood containing these larvæ were collected and placed in a tight box to await further developments. In the latter part of May the larvæ began to pupate, both in the wood and on the bottom of the box, without making any cocoons, and in a short time the saw-flies began to emerge. The insect proved to be *Harpiphorus varianus*, described by Edward Norton as early as 1861 (*Proc. Boston Soc. Nat. Hist.*, vol. viii., p. 156), from specimens collected at Farmington, Connecticut.

The saw-flies were seen flying about the Cornels in the Arboretum during the first week of June. On June 10th the first eggs were discovered and within a few days they were quite abundant. The eggs are pale green, oblong, and about four one-hundredths of an inch in length. They are deposited singly within the tissue of the leaf on the upper side. From one or two dozen to three or four hundred eggs may be deposited within a single leaf without any very definite order, although most of them are usually disposed in lines parallel with the midrib, or with the principal veins. Each egg makes a little swelling, noticeable on both the upper and the under sides of the leaf, and, with a little practice, egg-bearing leaves may be readily detected.

On hatching, the larvæ emerge on the under side of the leaf. They are then about six one-hundredths of an inch long and pale green in color, with yellowish head and black eyes. When at rest they keep close together, coiled up on the under side of the leaves; and they appear to feed only in the cooler parts of the day, in cloudy weather, or perhaps at night. Of the first leaves attacked, they eat only the more tender parts, and the leaves are left somewhat skeletonized; but as the larvæ get older they devour every part of the leaf down to the midrib. After the first moult, when they are about twelve one-hundredths of an inch long, the larvæ secrete a peculiar, very white efflorescence, by which the back and sides become covered. This is constant after each moult until the last.

This efflorescence is removed by the slightest touch, and when brushed off, the color of the body is a pale greenish white. The head, after the first moult, is black, and the legs and under side of the body yellow. At full growth the average length of the larvæ is about an inch. Some are smaller than others, however, and this possibly indicates the difference of sexes.

When the larva has cast its skin for the last time a complete and surprising change has taken place. All trace of white is gone, and the body is greenish yellow on the back and yellow beneath and along the sides below the spiracles. On each segment along the back are two large and two small black spots, and upon the sides, close above the spiracles, is a row of nearly square, black spots, one for each segment, but so placed as to lap over from one segment to the next.

The terminal plate above the ventral segment is black. The legs and prolegs are yellow, the former having a reddish spot on the outer side near the base. The tips of the claws are black. The great change produced by the last moult has led some observers to suppose that there are two distinct species.

Full growth is attained by most of the larvæ early in August, but some may not reach maturity until much later, and this season a few were noticed to pass the last moult about September 20th. The season last year was not so advanced, and, in some places, large numbers of larvæ were found in September. The larvæ eat very little after the last moult, and very soon they leave the plant and wander away in search of suitable places in which to hibernate. Stray pieces of decaying wood, fence posts and rails, dead branches and the corky bark of old trees are selected. In the Arboretum, many were found even boring into the soft pith of dead stems of Elder bushes. Sometimes two or more occupy one burrow. It is quite possible that some larvæ go into the ground to hibernate, but none have been discovered there.

Specimens confined in a large glass jar refused to enter some soil placed at the bottom, but when pieces of soft wood were put within reach the larvæ eagerly bored into them, and a number also disappeared within the cork stopper of the jar. Once in their burrows, the larvæ become much contracted, and remain so until pupation, which usually occurs only a week or two before the perfect insects appear. The males of the latter are considerably smaller than the females, and in the shape of the abdomen they are less pointed, but, otherwise, they closely resemble the females. These may be identified by the following characters: The abdomen is flattish and reddish brown, sometimes quite dark; the thorax and head shining black; the antennæ, about a quarter of an inch in length, have the three basal joints rusty colored, the fourth and fifth joints black, and the four terminal joints white or yellowish white. The first two pairs of legs are white at the base, the femora are black and red, the tibiæ and tarsi light brown, the latter often very light. The last pair of legs are usually white at base of femora, the rest being black or reddish and tipped with black; the tibiæ are red tipped with black, and the tarsi very light brown or yellowish white. The wings are clear, the outer half having a brownish or smoky tinge, and they expand nearly three-quarters of an inch in the males and almost an inch in some of the largest females. In length the bodies of the former are somewhat more than one-third of an

inch, and those of the latter a little less than one-half of an inch.

In a revision of the saw-flies (*Trans. Am. Ent. Soc.*, vol. i., p. 236), published in 1867–68, the habitats given are Connecticut, New York, Virginia and Illinois, showing that its known range at that time was widely extended.

The best, cleanest and most effective remedy we have tried is the powdered white hellebore. An application of this powder upon the foliage of infested plants soon caused the ground beneath to become covered with dead and dying larvæ. Kerosene emulsion would, undoubtedly, also be effective, as well as Paris green and London purple. But careful experiments should be made with the arsenical remedies, to determine the dilution necessary to prevent injury to the foliage. Where there are but a few plants, the egg-bearing leaves, or the leaves upon which the young are clustered, might be picked off and destroyed. Among the natural enemies of the insect is a very minute fly, which was observed apparently in the act of ovipositing upon its eggs. Unfortunately, the specimen was lost, so that the family to which it belonged was not ascertained.

Much good service seemed to be done by several species of bugs belonging to the family of *Pentatomoidæ*, which attacked and destroyed many larvæ, in the imperfect and mature stages, by perforating them with their slender beaks and sucking the juicy contents of their bodies. *Euschistus fissilis*, Uhler, and a closely related undetermined species, were especially noticeable, and *Negara hilaris*, Say, had the same habit, but was less common.

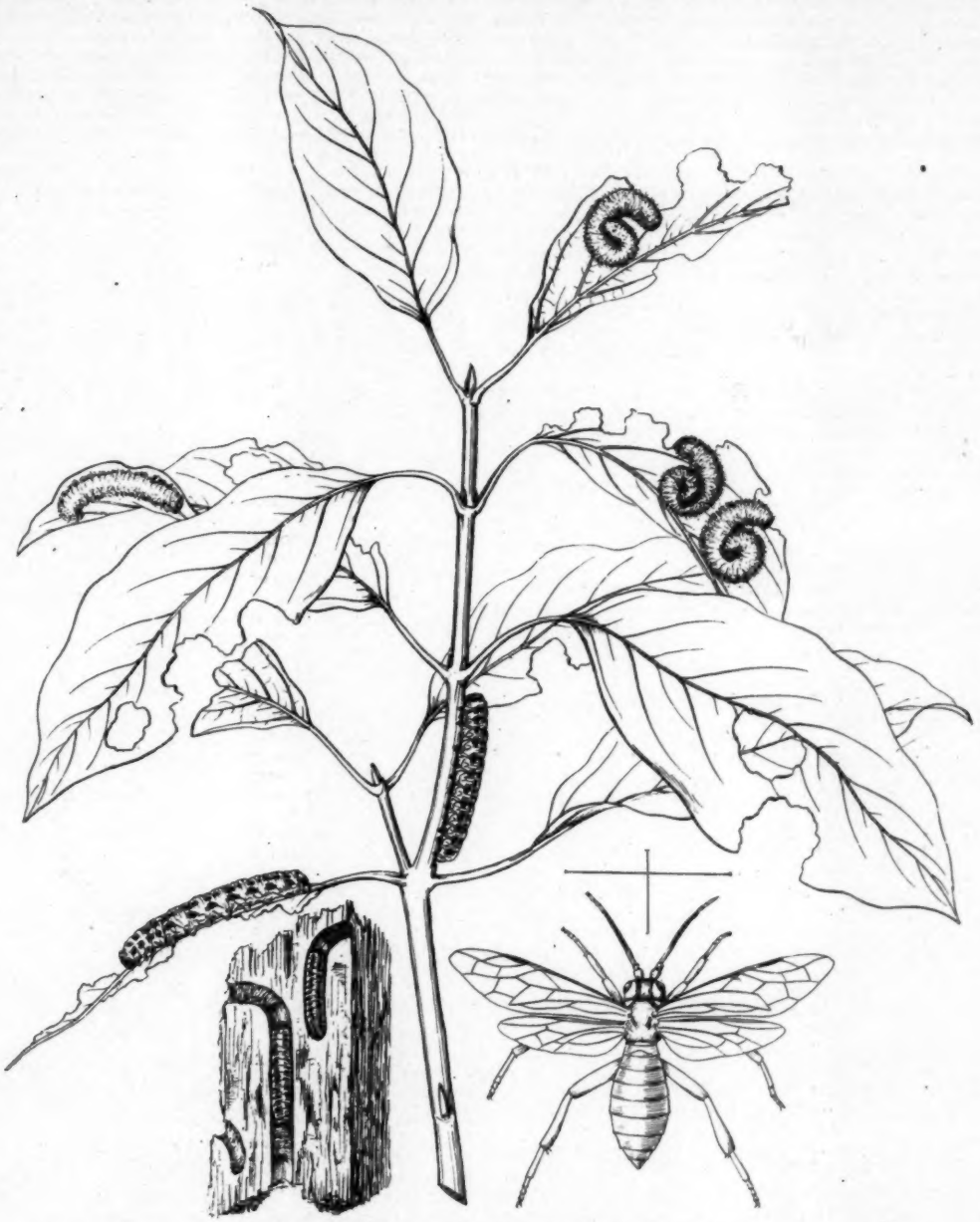

Fig. 138.—A Cornel Saw-fly—*(Harpiphorus varianus.)*—See page 520.
Larvæ before and after last moult. Larvæ hibernating in decaying wood. Female Saw-fly, enlarged.

Two of the most beautiful of the species of Cornus—*Cornus florida* and *C. Mas*—have thus far escaped injury by these larvæ. *C. alternifolia* also has been untouched. But the foliage of *Cornus sericea, C. alba, C. stolonifera, C. paniculata, C. sanguinea, C. asperifolia* and one or two others has been greedily devoured. In this region groups of these plants often appear as if they had been visited by fire. The accompanying figure of *Harpiphorus varianus* is from a drawing made by Mr. C. E. Faxon.

J. G. Jack.

Arnold Arboretum.

Foreign Correspondence.

London Letter.

THE event of the past week has been the great exhibition of vegetables at the Royal Horticultural Society's gardens, held in conjunction with a conference on vegetables. It was highly successful, there being a large concourse of visitors, chiefly practical gardeners, to witness a collection of vegetables that has probably never been surpassed in variety or quality in London. The remarkable point about this show was the fact that it had been organized and brought together without the aid of prizes or any reward whatever, beyond the thanks of the Society and the gardening public, so that it tends to prove that there is still abundant energy and resource among English gardeners in this direction, even if the Society itself is not flourishing as much as it did a generation ago.

I will not attempt to detail this enormous vegetable exhibition, because I think your readers are not interested enough in the sorts we grow, and, beyond the multitudes of varieties of every class of vegetables, I must confess that there was little that was novel or out of the ordinary run. I was on the lookout for something new, but failed to see the shadow of anything I had not seen before. I did not even see a dish of the new Chinese vegetable, *Stachys tuberifera*, or Spirals, as the tubers have been appropriately called. It was expected that there would have been a good show of Spirals, but somehow the public has not yet taken to them. Messrs. Vilmorin, the great seed-firm of Paris, showed a few things that seemed to attract everybody's attention, none more than the enormous Capsicums, named Large Bell and Golden Queen. Both these sorts had fruits quite four inches in length and as much across, the one being a bright red, the other a golden yellow. They are therefore highly ornamental and quite worth growing for decoration. There was a large collection of Capsicums from the same firm, but these were the most noteworthy. Messrs. Vilmorin also showed some varieties of Sweet Maize, which, to most people here, were novelties, and are quite likely to find favor if they can be cultivated. One called Extra Early Sweet Maize has a sweet, pleasant taste, even uncooked, and would be delicious after leaving the hands of a skillful cook.

Another novelty was the Melon Pear, an absurd name for the fruit of *Solanum Guatemalense*, which has recently been introduced, I believe, from the West Indies. It is a kind of Egg Plant, but I am told that the fruits, which are about the size and shape of turkey's eggs, and ivory white, are delicious in flavor and suitable for a dessert fruit. It requires to be grown, no doubt, in stove heat.

It will give you some idea of the exhibition when I state that the "Committee of Selection" awarded considerably over 200 certificates of merit to as many varieties which were necessarily not all new, but were selected for first rate quality. The certificate is intended to be a stamp of excellence, so that the public may have some authoritative and independent assistance in making selections. The reports of the committees will be published in a convenient form in due time, and they will undoubtedly be valuable, particularly to amateurs who do not employ professional gardeners. Though September is, on the whole, the best time of the year for a vegetable exhibition, the summer vegetables, such as Peas and Beans, could not be well represented, which was to be regretted.

A conference of growers and others interested in vegetables was held on each day during the exhibition, and the papers read and discussed were all of a practical nature, and they will, like the report, furnish sound information on their respective subjects when published. Among the papers were those by Shirley Hibbard, on Asparagus culture; H. J. Veitch, on the production of new varieties, which was supplemented by good information on the subject by H. Vilmorin, of Paris. Others read papers on Salads, food of plants, improvements in Peas (by the well-known raiser, Laxton, of Bedford), improvement in Potatoes, and on the supply of vegetables for a large family all the year round. All these papers, and the discussions thereon, will be awaited with great interest by gardeners.

During a walk round Kew Gardens to-day, in search of novelties, I came across several most interesting plants in bloom, and the one that most attracted me was Pringle's new Tiger Flower (*Tigridia Pringlei*). It was in full bloom in company with its well-known relative, *T. Pavonia*, from which, however, it may be distinguished at a glance although there is similarity between them. Botanically, the two plants may be distinguished from each other by the different form of the petals and other parts of the flower, besides other less obvious characters. From a garden standpoint it is quite an acquisition, because of its very brilliant color, the sepals being as bright a scarlet as it is possible for a flower to be—so bright, indeed, that the old species and its varieties are dull in comparison with it. Its growth is also dwarfer. The figure given of it in Garden and Forest admirably represents the plant. The bulb nurserymen are already inquiring for it, as they recognize in it "a good thing."

Another first-rate open-air bulb is the still rarer *Crinum Powellii*, a very beautiful hybrid variety, raised some years ago by a Mr. Powell, who hit upon the happy idea of intercrossing the common *C. Capense*, which is quite a hardy semi-aquatic plant with us, and the much more tender and far lovelier *C. Moorei*. The result of this cross is a plant possessing the hardiness of *C. Capense* and the splendid flowers of *C. Moorei*. In fact, some think that Powell's hybrid is even finer in flower and color than its tender parent. I saw it the other day in an open-air border in a cold part of Sussex, where it had wintered two years and was this season very robust. It had a stem a yard high and bore a half dozen very fine flowers, sweetly scented and of a deep rose pink. The leaves are as narrow as those of *C. Capense*, and it flowers continuously for six weeks. It is decidedly a plant to make a note of, and I believe it would be perfectly hardy in America.

W. Goldring.

Cultural Department.

Rot in Iris Germanica.

IN the cultivation of *Iris Germanica*, which has fleshy, running root-stocks, it is not rare to find a more or less extensive rotting of the root-stocks. The rot renders the affected portion soft and mushy; white, not changing the natural color, and highly offensive. Any portion of the root-stock may be affected, but it is more commonly the older portion, the newer, growing tips being freer from attacks. A large number of maggots were found in the rotten portion of some plants. On showing these to an entomological friend, he said they were the larvæ of a fly which lays its eggs in decaying tissue, and they were to be considered as an effect, not a cause, of the decaying condition.

During the past wet summer serious attacks of rot were seen in some instances. In a friend's garden, in June, large, established clumps of *I. Germanica* were literally rotted away at the roots, so that large masses could be pulled up by a slight twitch of the yellowish, sickly looking leaves. This garden is situated in strong loam in rather low-lying flat land. My own collection, consisting of about one hundred and fifty plants, is growing on a slight slope on strong loam with a sandy subsoil. A few of my plants were badly affected with rot, but none died. Most plants on examination showed slight or considerable injury in June, but have since recovered, and in transplanting them recently all were in good condition, slight traces of rot only being observable. Besides *I. Germanica*, many closely allied species having similar fleshy root-stocks have been observed to show indications of rot similar to that above described; but I have seen no such indications in bulbous species, or species like the *I. lævigata* (*Kæmpferi*), which have dense, tough, abbreviated root-stocks.

The remedy to apply appears to be removal to a drier, well drained soil, where these Irises will thrive. An occasional extra wet season like the present one will cause some injury in almost any spot; but as the decay is due to super-moisture rather than disease, serious losses need hardly be feared if a suitable situation is selected. In winter it is best to protect German Irises with a light covering permitting a free circulation of air to prevent the retention of moisture. Evergreen branches or salt hay are desirable, as they lie loosely and do not easily rot.

In importing Irises with fleshy rhizomes from Europe I have met with some quite heavy losses, and have seen frequent damage from rotting, doubtless on the journey; whereas other roots, such as Narcissus, Tulips, etc., in the same package with the Irises, have been, in the instances observed, in a perfectly sound condition. It would be a great advantage to purchasers if dealers, in sending such Irises for any considerable distance, would make sure that they are perfectly dry before packing, and then pack them in well dried material. Peat would be desirable for a packing material in such cases, as its antiseptic properties would tend to counteract rotting. A preliminary artificial drying of roots and packing might even be desirable.

Boston. *Robert T. Jackson.*

Plants for Forcing.

UNDER this heading it is not intended to present a catalogue of plants suitable for forcing for winter flowers, but rather to call attention to a few well known species as a reminder of the preparatory work, necessary at this season, to get the stock in proper condition for future operations.

The forcing of various plants for winter bloom has been much practiced in the past few years, not only among commercial growers but also in private establishments, and, in consequence, the demand for bulbs, hardy shrubs and other plants for this purpose has largely increased, though it may be said that among commercial growers, at least, the forcing of bulbs seems to have been overdone, and the inevitable reaction appears to be setting in.

This, however, does not affect the utility and propriety of forcing these plants for house decoration, for cut flowers, or to brighten up the conservatory during the dull days of winter; and it is to this end that the following suggestions and remarks are offered.

Fig. 139.—Japanese Flowering Apple.—See page 520.

In a very prominent place among plants for this purpose is found *Lilium longiflorum*, and also the so-called Bermuda Lily, *L. Harrisii*, the latter being best for early forcing, though *L. longiflorum* will fully repay those patient enough to wait until later in the season for its lovely blossoms, as they have more substance, and, consequently, last longer than those of *L. Harrisii*. The flowers of the latter, however, are larger and are produced in greater profusion.

If required for an early crop, say about the holidays, *L. Harrisii* should be potted in August, so that it may become well rooted before it is brought into the hot-house, as, in common with all bulbous plants for winter use, it should make the roots first, before the top begins to grow. Otherwise the growth will be weak and the flowers few.

With the Lilies this root-growth may be secured by placing them out in a cold frame after potting, and plunging the pots in coal-ashes, sand or soil, as may be most convenient. They should be allowed to remain in this condition until active root-growth takes place (usually in three or four weeks after potting). They may then be brought into a temperature of fifty-five to sixty degrees, until the flower-buds begin to form, when the temperature may be increased from ten to fifteen degrees without injury to the plants. In fact, I have known *L. longiflorum* flower very well after it had been subjected to a much higher temperature than this.

In potting these Lilies any good loam may be used, with the addition of some short, thoroughly rotted manure, and if the soil is very heavy, enough sand should be added to render the mixture open, the fact being kept in mind that these plants prefer a tolerably rich compost. As the plants should not be repotted after active growth has commenced, they should be put in pots large enough to contain sufficient nourishment to mature the flowers, with a little assistance in the form of liquid manure at intervals after the flower-buds appear.

For a fair sized bulb of *L. longiflorum* (from six to eight inches in circumference), a six-inch pot will be large enough, but if the bulbs are larger it will be necessary to use eight-inch pots for them, to prevent their becoming starved and losing some of their lower leaves before the flowers are ready to open. The drainage of the pots must be kept in good order, for while enjoying an abundance of water when

making their growth, the roots soon suffer if the soil becomes sodden.

If lifted plants of *Deutzia gracilis* are to be used for forcing, it is now time to secure them, so that they may be potted or planted in boxes and stored away in a cold frame until needed.

This Deutzia is among the easiest plants to force, but, if used to any great extent, it is better to grow it in pots for this purpose. If the plants are plunged out-doors in summer they need but little attention. By growing them in this manner the roots are well established, and, in consequence, finer flowers are produced. Besides, the flowers last longer than those on plants which have been lifted from the open ground in the fall and potted up. Some shapely little Lilacs in pots will also make charming objects for conservatory decoration, and these may be readily forced in a Rose house, after they have been treated in much the same way as the Deutzias.

Imported clumps of *Astilbe Japonica* are still used largely for winter and spring forcing, and are usually stronger and therefore better than home-grown plants. They should be potted up as soon as received (which is usually about the beginning of November), and require but little heat to start them into growth, though naturally they will not start in so short a time in midwinter as toward spring. Their feathery, graceful spikes of bloom are acceptable at any time, and form a welcome addition to almost any arrangement of cut flowers.

The Astilbe is of the easiest culture, the chief requirements for growing it being a light, rich soil, full exposure to sunlight and an abundance of water.

Holmesburg, Pa. *W. H. Taplin.*

Water Cress Under Glass.

WATER CRESS is not, necessarily, a plant that can grow only in water; it can be grown from the same roots all winter by any one who can grow a plant. No special care or preparation is necessary. It thrives in cool green-houses, and will grow very rapidly in abundant heat. I have raised Water Cress in this manner for several years, and have it now ready for market, fresh, clean, tender, pungent, in sprays more appetizing than when it is taken direct from its home in or near running water. Cuttings or slips of Cress, preferably the terminal shoots, four inches apart, should be planted about September 1st in the green-house bench in rows five inches apart. The first cuttings are made in about one month or six weeks, leaving a long stub of the first growth and the root undisturbed, and from these will again start another growth, which can be gathered as before.

No special treatment is required. Any soil that will raise good Lettuce will raise Cress; any kind of fertilizer used for vegetables stimulates the growth of this plant; six inches of soil, which should be kept free from weeds, is deep enough for it to grow in.

It is tender in the winter months, and is much better when grown in this way. Those who have used Cress gathered in late fall or in early spring, have noticed the tough leaf and dark foliage of plants grown out-of-doors. No more water should be used than is necessary to keep the level ground damp, not wet.

It is a profitable crop to raise. I retail the strawberry baskets, in which I put the freshly picked sprays, at ten cents each, and there are from three to five cuttings, according to the temperature at which the Cress is grown. It also grows well in frames, when the thermometer does not fall to thirty-two degrees; but if raised with heat, it grows more rapidly. I transfer my roots from the green-house to hot-beds in March or April, and there they continue their growth.

Any one having even the smallest space at command can grow Cresses. They will flourish in a box or large pot or vase, filled with rich earth, if the roots are strong, in a corner of the conservatory or in a sunny window, and yield a treat both to the sight and taste. Let those try it who love a healthful salad-plant.

West Springfield, Mass. *W. H. Bull.*

Oxalis.—The genus Oxalis is a very large one. We are told by the most recent authorities that it contains upward of 220 species, one of which, the common Wood Sorrel of Britain, is often spoken of as the Shamrock, as it is found growing in great luxuriance in Ireland. We have seen it covering acres of ground in moist shady woods, and it is not a matter of surprise that the honor of being a "national plant" is sometimes accorded to *Oxalis acetosella*. Here in the eastern states we have also an *Oxalis violacea*, a very pretty plant, with a small bulbous root. It is very suitable for naturalizing in shady places or on rock-work, where the pale violet flowers present in spring a pleasing appearance. We have cultivated here for several years another charming species. This is *O. lobata*, a native of South America, and said to be hardy in England, but we have never dared to risk it out here during winter; and, moreover, the heavy rains would completely disfigure its delicate beauty, for foliage and flowers are borne on slender stems about four inches high. The flowers are the size of a dime and the brightest yellow imaginable. In the green-house this plant lasts for fully two months in bloom, with a constant succession of flowers. Another plant, *O. Bowei*, perhaps the showiest of the genus, deserves mention as an excellent pot plant. Its foliage is very large, often three inches across, and surmounted by a stem bearing flowers of a bright rose color. These, like all others of this family, close up in the evening to reopen the next day to the genial influence of light and warmth. *O. Bowei* is a bulbous plant also, and is increased rapidly by this means, for where one is planted now there will be five a year hence. After the leaves die down the bulbs should be kept perfectly dry until it is desired to start them again, and by judicious planting at intervals in rich soil, using six-inch pots for three bulbs, *O. Bowei* can be made to flower all through the dreary months of winter, and is a very suitable subject for conservatory or room decoration.

Passaic, N. J. *E. O. Orpet.*

Orchid Notes.

Lælia grandis.—This very distinct and handsome Lælia first appeared in cultivation in 1849, when M. Morel, of Paris, received a few plants from near Bahia, Brazil, through M. Pinel. In May of the following year a plant flowered with him and was exhibited in London at one of the Regent Park shows. After this event, however, it seems to have disappeared altogether until about 1864, when Messrs. Low & Co. succeeded in importing a limited number of plants through their Bahian collector. Although lost so many years from cultivation since its first appearance, its name, however, was kept up, having been applied to a form of *Lælia purpurata*. Within the last few years *Lælia grandis* has been often imported, but never in very large quantities, and it is this fact which accounts for its scarcity even at the present day.

For the last two months and a half, plants of this species have been in flower here, and have been a great attraction. They have clavate, fusiform stems, which become furrowed when old, bearing a single oblong-elliptic, very leathery leaf of a deep green, while the peduncles which emerge from a large greenish sheath on top of the stem usually bear five flowers, each from four to five inches across. The sepals and petals are nankeen-yellow, the former being lanceolate-acute, wavy and recurved at the tips, while the latter are broader and more crisped on the margins. The trilobed, funnel-shaped lip is creamy white, suffused pale rose and conspicuously veined with purple lines which diverge on the anterior lobe. It might be mentioned that great variation in color exists in the flowers of this species as in others. Sometimes the sepals and petals are veined with purple, especially on the outer surface, while the color of the lip varies from very pale to deep rose-purple.

This species should be treated like *Lælia purpurata* in many ways and may be grown with that species. During the flowering season, which lasts from July to September, the plants require not too much water, although growing slowly. At the end of this period more rapid growth begins and consequently more attention to watering is necessary. Being a native of a warm, moist climate, the winter temperature should be about sixty or sixty-five degrees Fahr., and this may be allowed to rise several degrees during the spring and summer when the sun becomes more powerful.

Grammatophyllum Measuresianum (new species).—This remarkable species has been recently introduced from one of the Philippine Islands by Messrs. F. Sander & Co., St. Albans, England, and dedicated to R. H. Measures, Esq., of The Woodlands, Streatham. A great number of plants having been already distributed among various collections, the following remarks may be, therefore, of more than ordinary interest:

G. Measuresianum is characterized by its masses of oblong, elliptic, slightly compressed pseudo-bulbs, clothed with silvery membranous sheaths, and varying in length from eight to sixteen inches, more or less furrowed when young, and deeply wrinkled when old. Each pseudo-bulb bears at its summit from four to six deep green, persistent, broadly lanceolate, acute leaves, eighteen inches or two feet long. In a wild state from sixty to seventy flowers, each about four inches across, are borne in April on stout, erect scapes, which spring from the base of the pseudo-bulb and are from five to seven feet tall. The narrower petals vary in color from cream to greenish yellow,

and are handsomely blotched with dark brown or blackish purple, the incurved tip of each sepal invariably having a large blotch of the same color. The small lip is pale creamy yellow, with a purple stain outside at the base. The bluntly ovate incurved side lobes are each traversed by seven sepia-brown parallel lines, and the disc, which is covered with fine white hair, has two parallel elevated keels or ridges which terminate in a small, hairy protuberance in the centre of the very small middle lobe, which is oblong in shape, creamy white and lined with purple-brown, while the slender, arching column is white, tipped behind and streaked in front with purple. On each side of the yellow pollen masses, which show through the anther case, is a small purple spot, thus giving the column the appearance of some insect peeping out from between the incurved side lobes of the lip.

It is a peculiar fact, and one worthy of notice, that the first five or six flowers at the base of the peduncle are always abnormal, that is, abnormal in differing from the other flowers, but natural in being always present. These lower flowers possess only two sepals and two petals, all larger and more thickly blotched than in the normal flowers. The column is also present and normal, but the lip and third sepal are entirely absent. I have seen a dried flower of *G. speciosum* having only four segments and a column, but in all the other species known, with the exception of *G. Fenzlianum*, which lurks in some obscure German herbarium, I did not see this peculiarity at all. Neither has it been mentioned in the description of any other species, so far as I can find out, a fact which in itself indicates that abnormal flowers have not been noticed, or surely such a fact would have been mentioned. *G. Measuresianum*, then, possesses the distinction of always having abnormal flowers at the base of the peduncle. Now the question arises, what is the object of these abnormal flowers? In nature everything has its use, but what is the use of these flowers? It is not possible that they can be female, while the others are male, for two reasons. First, because the column is precisely the same as that in the ordinary flower, having its pollen masses and other organs intact; and, second, because the pedicels of female flowers, as in Cycnoches and Catasetums, are, as a rule, much thicker, on account of containing the ovary. But in the abnormal flowers of *G. Measuresianum* there is no difference whatever in the thickness and length of their pedicels and those of the ordinary flowers. If, then, these lower flowers are not female, what are they? Perhaps time will show.

At present little can be said about the cultivation of this species, but, judging from the strong and numerous growths thrown up by the imported pieces here in the nursery, one may safely say that it will not be a very difficult subject to manage. Some of the pieces are done up in well drained teak baskets in a compost of rough, fibrous peat and sphagnum, while others are hung up just as they arrived, in a warm, moist house. No water, or only very little, is given yet, the moisture of the atmosphere being apparently sufficient for their wants, as the pseudo-bulbs have become nice and plump and send out their growths. It might be mentioned that in its native country this species is always subject to plenty of sun and abundance of water during the season of growth, and the sight some of the plants present may be imagined from the fact that the collector saw one piece with fifteen spikes over five feet high, each bearing about seventy fully expanded flowers.

St. Albans, England. *John Weathers.*

The Forest.

The Mountain Forests of Vancouver's Island.

THE forests of the mountains in the interior of Vancouver's Island differ materially from those of the low grounds near the coast, while as one travels inland the Douglas Fir (*Pseudotsuga taxifolia*) is the chief tree until an elevation of about 800 feet is reached. It then becomes insensibly intermixed with the western White Pine (*Pinus monticola*) and a sprinkling of Red Cedar (*Thuya gigantea*). Within a few miles of Departure Bay, where all steamers bound for Alaska take in coal, rises Mount Benson, attaining the height of 3,360 feet, at about eight miles in a direct line from the coast. The lower slopes of this mountain are covered with Douglas Fir of enormous size, many of the trees being nearly 300 feet high and over eight feet in diameter. The chief undergrowth is the Bracken (*Pteris aquilina*, var. *lanuginosa*), which is generally from four to six feet high, and so interlaced that to force one's way through it, without first tearing it apart with the hands, is impossible. After this is passed the undergrowth is composed of Salal (*Gaultheria Shallon*), which is, if anything, more difficult to get through. Amongst the Salal the trees stand closer together, and are much less in diameter, but tower straight as arrows to an immense height. Here the Pine becomes quite frequent and the Salal more interesting, for, in great profusion, the rare *Boschniakia Hookeri* is growing as a parasite upon its roots.

Then, as one ascends still higher, the western Hemlock (*Tsuga Mertensiana*) comes in, and our forest is composed of four species. Gradually the trees grow less in size, until, as the summit is neared, they become stunted, but still healthy and vigorous. On the summit two species appear, as if they were new creations. These are *Tsuga Pattoniana* and *Abies amabilis*.

Later explorations on other mountains showed that the same trees kept their relative position, but toward the north were found at a decreasing altitude. It was ascertained that the forest-trees of one mountain were those of another, and that *Tsuga Pattoniana* and *Abies amabilis* were the rule, and not the exception, as they were in company on every mountain and were the last to disappear at an altitude of about 5,500 feet. Above this very few trees are found, but it was quite evident that their absence is not caused so much by cold as by the immense snowfall of the moist winter, which leaves the mountain summits covered to a great depth in the spring. Close to snow of unknown depth, trees, with a diameter of two feet, are growing vigorously on Mount Arrowsmith, while above them all is snow or depauperated and broken trees, flattened down by the snow, growing while they can, and lying dormant the remainder of the year.

Without exception, the forests of Vancouver's Island are the finest now in Canada. It is sad to think that these noble forests are being devastated year after year by fires started by men who are "improving" the land, and what it is impossible to do with the axe is being done with fire. In every part of the island the timber is sound and fit for market, and it might be kept so but for the recklessness of irresponsible men. For every tree destroyed by the axe a thousand are being destroyed by fire, and year by year the number is increasing. During the last half of July and August and early September (1887) the whole country was enveloped in smoke, and fire met the traveler at every point. A few years more and these noble forests will be but the blackened remains of a glorious heritage, as every year increases the power of the fire and gives it more prepared fuel for the next season. It is not alone on Vancouver's Island that this destruction is going on.

The Olympian Mountains, on the other side of Puget Sound, in Washington, are being denuded in precisely the same way; and this autumn (1889), over nearly the whole of British Columbia and northern Washington, the sky was obscured for six weeks by the dense smoke of the forest-fires raging in all parts of the country. *John Macoun.*

Ottawa.

Forest Fires in Northern Canada.

NORTHWARD of the deciduous and mixed forests of southern Canada, a vast belt of conifers, about 700 miles in breadth, stretches for 4,000 miles from the eastern coast of Labrador to the Rocky Mountains and continues beyond them into Alaska. The northern zone of this belt consists of Black and White Spruce and Tamarac, but as we go south these become mixed with Banksian Pine, Balsam Fir, and in the east with White Cedar, and finally with Red and White Pine. Excepting near the verge of the forest, there is also a greater or lesser mixture of Aspen, rough-barked Poplar, White Birch and the various northern Willows, but in a general way this belt may be described as a coniferous forest.

Notwithstanding its immense extent, it may be said that fire has run through every part of it at one period or another. Forests of this kind are particularly liable to destruction by fire. The trees are comparatively small, and where they do not stand closely together the branches grow all the way down to the ground. The open spaces, no matter how rocky, are covered with reindeer mosses, which in the summer-time are as dry and inflammable as tinder, while the deep carpeting of the yellow mosses among the trees is equally dry, and helps to give body to the flames.

The Indian hunter or wild Indian of the north, knowing how destructive forest-fires are to the animals on which he depends for food and fur, takes all possible care to prevent them, yet if one ascends a high hill in any part of these regions, so as to obtain an extensive view of the country, he will find the normal condition of the woods to be "patchey," or to consist of areas of second growths of various ages mixed with others of older timber. The latter may have attained its full growth, and yet not represent the original forest, as it has probably sprung up on ground which had been burnt over at

a time more remote than would represent the life of any of the trees standing upon it. The writer has crossed the entire breadth of our northern forests in many parts, and has found these conditions to prevail everywhere.

Knowing the care which the Indians have always exercised, and the fact that the country had not been invaded by white men, the question arises—what caused these fires which have in turn swept over every part of the enormous country—and not only once, but again and again since a very early period? My answer is that forest-fires are a natural phenomenon, and that the conditions which we find in our northern woods could not otherwise have been attained. These fires have had an effect on the formation of the soil, on the rotation of crops of trees—so necessary to their healthy condition—and on the dispersion of their seeds.

We have both direct proof, and also the evidence of the trees themselves, that forest fires have originated without human agency, and that they have been going on ever since the present species of trees existed—if, indeed, they have not played a part in producing some of their characters. Lightning has been the commonest cause of these fires, although in some cases they may have originated from spontaneous combustion, due to the decomposition of pyrites, which is known to have set fire to beds of lignite in the Saskatchewan region.

In the northern states and the inhabited parts of Canada it is not uncommon for lightning to strike barns and houses and set them on fire in the hot months of summer. This is the season when our northern forests are dry and ready to burn, and we should naturally expect similar accidents to occur among them with at least equal frequency in proportion to area. Examples have been observed where the fire which has destroyed a large area has been traced back to a tree which had been struck by lightning. With an experience of over thirty summers spent in these woods, I have only once actually witnessed a case of this kind. The lightning on this occasion was plainly seen to strike the brink of a wooded bluff near Red Rock, on Lake Superior, and to set it on fire. Owing to the very small number of human beings in these regions, the chances of these occurrences being witnessed are very few as compared with civilized regions, yet the Indians tell me that they frequently happen.

Referring to the evidence afforded by the trees themselves, that forest fires are a natural phenomenon, I shall mention the case of the Banksian Pine. The cones of this tree are hard and remain closed as long as the tree lives. The older ones become weathered and covered with lichens, often indicating great age. The tree may fall down and rot, and the cones fall from the decayed branches, yet they will not open. But if the tree should become scored by a forest-fire, they will immediately gape open, and the healthy seeds will become scattered far and near by the wind.—*Robert Bell, Assistant Director Geological Survey of Canada, in "Forest Leaves."*

Correspondence.

The Lynn Public Forest.

To the Editor of Garden and Forest:

Sir.—A large proportion of the German cities, if not, indeed, the most of them, have their public forests. These date back to the earliest days, when woodland was held in common to supply the people with fuel and timber. Fortunately the cities have retained their titles to large portions of these adjacent forest tracts, which, administered on scientific principles, are now sources of considerable revenue. But their chief value lies in their service as delightful rambling grounds for the people, and to their existence is largely due the healthy love of Nature and of out-door life that characterizes the Germans. One of the pleasantest features of the city of Leipzig, for instance, is the noble pleasure-ground called the Rosenthal. This is a park consisting of a great central meadow surrounded by woods. The park is continued for miles out into the country by the city forest, which is intersected by rambling paths and roads. In the midst of it stands the famous Thousand Year Oak.

The early towns of New England likewise held their woodlands and pasture lands in common. The second settled town in the Massachusetts Bay colony, now the city of Lynn, had for its common woodland a wild and rugged tract that, from the slight fringe of civilization which had established itself on the shore, began at the feet of the outer crags of rocky hills and stretched away indefinitely into the vast wilderness of the continent. This woodland was held in common until 1706, the proprietors of Lynn being free to enter it and cut all the fuel and timber required to meet their needs. At that date the tract was divided up among the land owners, subject to the restriction, which still remains, that any man might cross the territory of any other whenever convenience demanded. The greater portion of this territory, within the municipal limits of Lynn, remains in very nearly its original state. It occupies the north-westerly portion, which is a region of rock-ribbed hills, with bold ledges and precipitous crags, the intervening glens and valleys coursed by clear and rapid brooks and rills, and having in their depths extensive swamps and ponds. Its wildness is in marked contrast to the densely populated and bustling city close at hand, whose masses of buildings back up into the outer valleys of the territory.

This region is now to return to its original character of a woodland held in common, with the function, in addition, of a free public pleasure-ground. Its dedication to this purpose has proceeded through successive steps by a sort of evolution. Lynn has been exceptionally fortunate in her public-spirited citizens—men enterprising, progressive, of liberal ideas and cultivated minds. Their life-long acquaintance with this region naturally endeared it to them, and made them ardent lovers of Nature. When the growth of the city demanded a more extensive and systematically planned source of water supply, attention was directed to the valleys of this uninhabited territory, and a magnificent scheme was adopted, sufficient to meet the wants of the public for many years to come. The series of storage basins constructed in the valleys created a number of beautiful and natural looking lakes that, expanding and meandering among the abrupt hills, enhanced the beauty of the landscape. With wise forethought, the Water Board took possession of the lands adjoining the ponds, that they might remain forest covered, making the water supply more steady and preserving it from contamination through private occupancy.

In the meantime the project of converting the remaining portion of the region into a free public forest took shape among a number of citizens by the organization of an unincorporated body called the Public Forest Trustees, whose purpose was to hold in perpetuity, for the free use of the public, all portions of this territory that might be acquired either by gift or purchase. A number of detached parcels were thus secured, the most important of which was the strikingly picturesque and romantic tract around, and including, the famous Dungeon Rock, where pirates' treasure was supposed to be buried, and which for many years, until very recently, was the scene of the excavations of the deluded searchers, the Marbles, operating under spirit guidance through mediums. But, without the right of eminent domain, there was but little prospect that under this plan enough contiguous land could be secured to form a continuous forest-territory, before much of the woods had been hopelessly ruined. Fortunately, public sentiment in favor of the project had been educated to such an extent that the City Council lately decided to take advantage of the Public Park Act of Massachusetts, an appropriation of $30,000 for the purchase of lands was made, which, in addition to private subscriptions, gives a fund of something like $50,000 for the purpose. A Board of Park Commissioners, comprising just the right men for the place, has been appointed, and these are now proceeding to take the lands by the right of eminent domain legally conferred upon such bodies.

The Park Commission, the Water Board and the Public Forest Trustees will act in harmony in the improvement and administration of the region as a public forest, which it will be, pure and simple, with no attempt to incorporate the ordinary park features into its plan. There are about 800 acres of land to be taken by the Park Commission, which, with the 200 acres or so held by the Public Forest Trustees and the territory already taken by the Water Board, including about 200 acres in the ponds, will make a total of something like 1,400 acres, which perhaps may be considerably increased by lands which it is desirable for the Water Board yet to take.

The character of the forests is chiefly that of a young and thrifty growth of Oaks and other hard woods, with an abundance of Maples in the swamps, and many groves, clumps and groups of beautiful Pines and Hemlocks, some of which are of considerable age and size. There are passages of romantic sylvan beauty; and numerous legends and traditions, as well as historic incidents, add to the interest of the place. The highest points in the region are somewhat less than 300 feet above the sea-level, but the neighborhood of the ocean gives their altitudes full value, and the various prospects commanded are extensive and unusually impressive. From one eminence there is a broad view over the ocean, on which the rocky peninsula of Nahant seems to be floating, and the populous city spreads out close at hand, in contrast to the

woodland quiet amidst which the beholder stands; from another the prospect to the southward ends with the graceful contours of the Blue Hills of Milton, toward which the vision is gently carried from the rugged woodland foreground by the broadening landscape, and the seaward opening valley frames a vista of the shore-line curving southward to far beyond the entrance of Boston Harbor. Again, there are views over the forest amphitheatre that forms the main feature of the region, with nothing to be seen but wood, water and rock; all traces of civilization are shut out, and on every side the tree-covered hills undulate indefinitely into the distance, so that it seems as if the entire continent might still be the wilderness it was when the Puritans first came here. When the atmosphere is clear Mounts Wachusett and Monadnock stand out sharply in the distance.

It is proposed to develop this region for the convenience and pleasure of the public very simply, in accordance with its wild and natural character. Roads and walks will make the most notable portions easily accessible, and there will be nothing to prevent the visitor from wandering across country to his heart's content. A service of public carriages will be established to make the tour of the forest at cheap rates of fare for the round trip, and passengers will be dropped at successive points wherever they may desire, to continue the excursion in succeeding vehicles on the same tickets. The conditions are favorable for the development of a beautiful forest-growth, and it is intended to apply the most approved forestry methods in the administration. It has been suggested that "the Lynn Commonwood" would be a most appropriate name for the forest, having a historical significance in indicating its original function while also expressing its present character as a public pleasure-ground.

This forest will be the largest area dedicated to public park purposes in New England. Lynn has thus led the way in establishing the first public forest, and has set a noble example which ought not to be without effect upon other communities. Although a local enterprise, its benefits are far more than local. Its value to the neighboring New England metropolis can hardly be overestimated. Lynn is already, geographically, a portion of Boston, and will be knit closer together with the central city as years go on. An eminent landscape-gardener, in a recent examination of the place, predicted that it would become to Boston what Fontainebleau is to Paris, and Richmond and Windsor are to London.

Boston. *Sylvester Baxter.*

The Disappearance of Wild Flowers.

To the Editor of Garden and Forest:

Sir.—You speak in reference to the practice of digging large quantities of popular wild plants from the woods and marshes, and thus nearly, or quite, exterminating some species from certain regions. Many a botanist and lover of nature regrets to see his favorites disappear. In this part of Michigan large orders have been filled from time to time for wild plants. Changes are taking place very rapidly in this part of the state. Swamps and marshes are often drained; then, during some very dry season, fire spreads, accidentally or otherwise, burning deep into muck and sphagnum, destroying many native herbs and shrubs.

Proprietors are still making extensions to their clearings; of course, paying no attention to Trillium, Cypripedium, Isopyrum or Hepatica. They are preparing more land to raise more wheat and corn, and grass to support more cattle to get more money to pay debts or buy more land. If we knew certainly where these clearings were soon to be made, there would be little harm in digging wild plants from them. If we could foresee what woodlands, marshes or ponds would remain "unimproved" for a long time to come, we could make attempts to save some of the gems which thrive there. But, here lies the trouble; we can seldom know what changes will take place in this new country. So far as we are concerned, in central Michigan, it seems about as well to collect choice plants, and let those have them who appreciate and will care for them, as to leave them with the chance that they will soon be burned over or plowed under.

Agricultural College, Mich. *W. J. Beal.*

Trypeta Pomonella in New Jersey.

To the Editor of Garden and Forest:

Sir.—In your note on Dr. Hoskins' article on *Trypeta pomonella* you say it has been known many years in the West, but is not reported as injurious in this part of the country. I have a tree of Jersey Sweet, the fruit of which is invariably so badly infested with the maggot as to be absolutely worthless, and this has been the case for several years. A tree of Golden Sweeting standing next to it is also more or less infested every year, so that I hardly ever dare to eat one unless I inspect it closely. If the apples are gathered and allowed to stand in a barrel for a week to become mellow, they then show the devious tracks of the disgusting pest through the skin, which is discolored, and if the apples are cut, they will be found often entirely riddled and honeycombed. I have seen apples in Connecticut badly infested with them, and, perhaps, Mr. P. M. Augur, the official pomologist of that state, could tell of Fameuse being entirely ruined by them. I consider it the worst pest we have to contend with in connection with the apple, because it is so minute that its presence is often not suspected till the mischief is done. Many persons have doubtless eaten infested apples in blissful ignorance of the presence of these loathsome insects, as they are hardly visible in their early stages, or in the early stage of their work, so near the color of the flesh of the apple are they. This is the reason, doubtless, why Dr. Hoskins has failed to find them. If in cutting the apples he should dislodge them and get them against the discolored flesh, a sharp, steady look would doubtless be rewarded by seeing them squirm, but, as they are of the color of the apple's flesh, it requires a keen eye to see them. They are small, but powerful for destruction. I have very seldom found them here except in the apples named, but I have seen Fameuse apples in Connecticut destroyed by them. I first noticed them about half a dozen years ago, and was induced to study them and find their authorized name. *E. Williams.*

Montclair, N. J.

The Dwarf Weeping Willow.

To the Editor of Garden and Forest:

Sir.—The Willow spoken of by Professor Budd, of Iowa, as the "Napoleon Willow," is likely, if as hardy as reported, to be an extremely popular tree. But why "Napoleon"? Is it of the species or variety said to hang over the famous grave at St. Helena? This I have supposed to be the common and decidedly tender tree, which can hardly be grown north of Massachusetts, and not very successfully there. My young trees, from cuttings sent by Professor Budd, do not resemble this, having smaller, shorter and darker foliage. They are not yet tall enough fairly to test their hardiness against cold; but as Iowa has as hard winters as northern Vermont, I hope to find them a success. I hardly know of any tree that would meet with a wider sale than a true iron-clad Weeping Willow, and a moderate degree of dwarfness would be an added merit.

Newport, Vt. *T. H. Hoskins.*

Recent Plant Portraits.

Tulipa Maximowiczi, Rgl. *Gartenflora*, October 1st; a delicate species, with narrow leaves and small flowers, with acuminate scarlet perianth-segments; a native of Bokara, and closely related to *T. linifolia*.

Tulipa Batalini, Rgl. *Gartenflora*, October 1st; a yellow flowered Bokaran species.

Botanical Magazine, October.

Dracæna marmorata, *t.* 7078; a fine tropical species from Singapore, whence it was introduced to Kew in 1882, and flowered there for the first time last year. "The most striking characteristic of the present plant, from a horticultural point of view, is its very large, sessile, plicate, bright green leaves, copiously marbled with white."

Primula pusila, *t.* 7079, A; a common and widely distributed alpine species of the Himalaya, found at elevations of 13,000 to 16,000 feet, where "it forms considerable tufts. Its sapphire-blue flowers are very attractive." Sir Joseph Hooker calls attention to the fact that, unlike many Primroses, it shows through its wide range of distribution no inclination to vary from the type form.

Primula petiolaris, *t.* 7079, B; of this plant Sir Joseph Hooker remarks "that it is one of the commonest and most variable of the Primroses of India, or perhaps the world. It abounds under innumerable forms throughout the Himalaya, at elevations of 8,000 to 14,000 feet from Garwhal to Bhotan, varying from a dwarf Alpine no bigger than a penny piece, with sessile leaves and flowers, to a coarse herb, with long petioles, spathulate-obovate or orbicular-cordate leaves a span long, and umbelled flowers on a stout scape." The variety figured is that known as Nana. It is represented with short-petioled leaves and short-stemmed pale purple flowers, with a yellow eye.

Fritillaria Bucharica, *t.* 7080; a handsome and interesting species, with leafy stems, and lax, many flowered racemes of greenish white, campanulate flowers, rather less than an inch long. It is one of the plants discovered by Dr. Albert Regel in central Asia.

Notes.

An ever-blooming Rose of dwarf habit, with bright pink semi-double flowers, called *Rosa semperflorens Fellenberg*, is used largely in Berlin for the decoration of flower-beds in public squares and private gardens. It remains in bloom throughout the entire season, and appears to be admirably suited for the purpose for which it is used.

The increase in the cultivation of the Chrysanthemum in this country, of late years, is something almost fabulous. It is certainly our most popular flower, and Crysanthemum exhibitions to be held during the coming month are already arranged for at Charleston, Chicago, Boston, Philadelphia, Detroit, Cincinnati, Indianapolis, Orange, Montreal, and at several of the smaller New England cities, like Worcester, Springfield and New Haven.

A correspondent of *The Garden* (London) calls attention to the beauty of a bed of the Hybrid Tea Rose, Grace Darling, which he had seen blooming in the gardens at Kew during the last week of September. Grace Darling is one of the most beautiful Roses of its class, and was to be seen during the past summer in great beauty and profusion in the flower markets at Carlsbad, in Bohemia. It is a plant of robust habit, with good foliage, producing clusters of fragrant flowers. These, when well grown, are compact in habit, with bright peach-colored petals, shaded to creamy white.

Our attention has been called recently to a charming combination of autumn colors, produced by a plant of the Chinese Wistaria, running through and over a tall mass of the Staghorn Sumach. The dark rich green of the Wistaria serves to bring out and intensify the scarlet tints of the Sumach. The converse of this effect may be produced by a Virginia Creeper rambling over a Red Cedar-tree—a natural combination often found in the woods and by the roadsides in our eastern states. This natural mingling of scarlet and dark green produces one of the most beautiful effects of autumn color which can be seen in America.

Shortia has long been regarded as one of the rarest plants in the North American flora. Now, however, it is known to be so common, in at least one region, that a long established vernacular name for it is in common use among the few families of mountaineers who inhabit the valleys at the headwaters of the Savannah River, where Shortia is found. Galax, the near relative of Shortia, is known almost universally to the people of the southern Alleghany Mountains as Coltsfoot, from a fancied resemblance of the leaf to that of a colt's foot. The smaller leaf of Shortia, which resembles somewhat the leaf of Galax, is called "Little Coltsfoot."

A hybrid Rhododendron, raised several years ago in Mr. John Waterer's nurseries at Bagshot, in England, is a plant of much promise. It is the result of a cross between the Himalayan *R. Dalhousianum*, and the well known variety of Catawbaiense hybrids, *R. album elegans*. The hybrid has large, deep green foliage; it is a free bloomer; the flower trusses are large, and the individual flowers, which are pure white, faintly marked with small pink spots on the upper lobe of the corolla, are large and possess great substance. This hybrid is quite hardy at Bagshot and there is a chance that it may prove so here in the northern states. It can, in any case, be grown here in a cool house, or with winter protection in a pit or cold cellar.

Maréchal Niel rosebuds, grown in the open air in southern Austria, are sold in large numbers during the summer months in some of the health resorts in Germany. They are often fine specimens, and not infrequently are tastefully arranged with the red and green foliage of the changing Virginia Creeper—a favorite arrangement being three buds on a fan-shaped mass of leaves made to be held in the hand. The beauty of the buds is often sadly marred, however, by the custom which prevails in some places of turning back artificially the outer rows of petals for the purpose of increasing the apparent size of the flowers. A combination of Maréchal Niel roses, with sprays of the foliage of the Purple Beech, is a favorite one, and the contrasting of the two colors produces an excellent effect.

The death is announced of Mr. John Ball, the distinguished English botanist. His studies were devoted largely to botanical geography and to philosophical questions relating to the origin and descent of existing floras. Mr. Ball's best known works are "The origin of the Flora of the European Alps," published in 1878, and his "Contributions to the Flora of the Peruvian Andes, with remarks on the history and origin of the Andean Flora," published in 1885, in the journal of the Linnæan Society. He accompanied Sir Joseph Hooker, in 1871, in his scientific mission to Morocco, publishing on his return a catalogue of the plants discovered, with critical introductory observations (his first attempt to explore the chain of the Greater Atlas was made as early as 1851). Mr. Ball traveled extensively and was a practiced and accurate observer, and one of the very best books of recent travels is the one in which he described his South American journey, which carried him round that continent. Mr. Ball was in North America in 1884 at the meeting of the British Association at Montreal, and of the American Association at Philadelphia, later, accompanying his old friend and correspondent, Dr. Asa Gray, on the last journey the Cambridge Professor made to Roan Mountain and other points of botanical interest in North Carolina. Mr. Ball belonged to a school of botanists of which only a few members remain; and he was almost the last of his associates and contemporaries.

Death has ended, too, the long and brilliant career of Leo Lesquereux, the Nestor of our botanists and the most distinguished student of palæontology in the United States. He died last week in his home in Columbus, Ohio, in his eighty-third year. Professor Lesquereux was one of the Swiss naturalists attracted to America by Agassiz, whose assistant he became at Cambridge in 1848. Subsequently he removed to Ohio, and devoted himself almost exclusively to the investigation of fossil plants. His best known publications are a "Catalogue of the Fossil Plants which have been named or described from the Coal Measures of North America," and the "Coal Flora," which formed part of the Report of the Second Geological Survey of Pennsylvania. He contributed a large number of papers upon fossil botany to the reports of the different Government surveys of the western part of the continent. Professor Lesquereux's principal contribution to present botany was his "Catalogue of the Plants of Arkansas," joined to his botanical and palæontological report to the geological survey of that state.

The growth in popularity in Europe of the Tuberous Begonia can hardly escape the notice of the most casual observer. The plants are now seen everywhere. They form the most attractive feature in the flower-beds of city squares in central Europe; they decorate the most pretentious of the ugly gardens of the great hotels, and they may be found growing and flourishing in pots on the window-sills of the smallest cottages in remote Swiss villages. They are gradually driving out the old Scarlet Geranium from cottage gardens. This sudden leap into popularity is surprising because it is barely a quarter of a century since the species from which this new race of Begonias sprung were entirely unknown; and in all the history of floriculture there is not another case of a new race of plants taking at once such a hold upon popular affection. There is danger, however, that the florists will spoil these pretty plants as they have spoiled so many others in their pursuit of novelties, and of new and startling forms and varieties. The double flowered Begonias, which are just now all the rage, are far less attractive than the single flowered varieties; and there is danger, too, that even the single flowers may be made too big and ungainly for harmonious combination with the plants which bear them. The charm of a Begonia flower is in looking like a Begonia flower, and not like a small Hollyhock or a deformed miniature Rose; and yet the best claim the advocates of these double flowers make is that they look like something which they are not—a Rose or a Hollyhock. Still, as long as the public continues to consent to pay three or four times as much for the double flowered varieties as for those with single flowers, the florists can hardly be blamed for devoting their energies to their production.

Catalogues Received.

C. E. Allen, Brattleboro, Vt.; Seeds, Plants and Small Fruits.—J. A. De Veer, 183 Water Street, New York; Choice Holland and Miscellaneous Bulbs, Seeds, Plants, etc.—F. W. Kelsey, 208 Broadway, New York; Hardy Trees, Shrubs, Roses, Bulbs, etc.—Harlan P. Kelsey, Highlands Nursery, Highlands, N. C.; Plants and Flowers of the Southern Alleghany Mountains.—John Laing & Sons, Forest Hill, London, S. E., England; Dutch, French and other Bulbous Roots, Fruit Trees, Roses, Shrubs, Begonias, etc.—J. L. Normand, Hill-Side Nursery, Marksville, La.; Oriental Plums, Peaches, Pears, Vines, etc.—Reasoner Brothers, Royal Palm Nurseries, Manatee, Fla.; Tropical and Semi-Tropical Fruit Plants, Bamboos, Aquatics, Conifers, Palms, Cacti, etc.—E. W. Reid, Bridgeport, O.; Small Fruits, Apple, Pear, Plum, Peach, Quince and Deciduous Trees, etc.—George Richardson, Lordstown, O.; Rare Water Plants.—G. L. Taber, Glen St. Mary Nurseries, Glen St. Mary, Fla.; Fruit Trees.—Joseph Tweddle, Vine Valley Nurseries, Stoney Creek, Ont.; Grape Vines.